ADVANCES IN MATHEMATICS 58, 322 (1985)

Book Reviews

M. G. KREIN, *Topics in Differential and Integral Equations and Operator Theory*, Birkhauser, 1983, 303 pp.

H. G. KAPER, C. G. LEKKERKERKER, AND J. HEJTMANEK, *Spectral Methods in Linear Transport Theory*, Birkhauser, 1982, 345 pp.

K. CLANCEY AND I. GOHBERG, *Factorization of Matrix Functions and Singular Integral Operators*, Birkhauser, 1981, 234 pp.

C. APOSTOL *et al.* (Eds.), *Invariant Subspaces and Other Topics*, Birkhauser, 1982, 229 pp.

H. BRÉZIS, *Opérateurs Maximaux Monotones*, North-Holland, 1983, 183 pp.

H. BART, I. GOLDBERG, AND M. A. KAASHOEK, *Minimal Factorization of Matrix and Operator Functions*, Birkhauser, 1979, 227 pp.

The late William Feller used to say: "I could stare all my life at a symmetric matrix, I will never get Hilbert space out of it!" And sure enough, Hilbert space has proved to be one of the richest inventions of the mathematical mind. Like a good invention, just at the point when everyone thinks her dead, it springs back to life with the cry "*Eadem resurgo.*" We wish it a long ninth life.

N. F. HURT, *Geometric Quantization in Action*, Reidel, 1982, 336 pp.

As one leafs through this book, the intriguing question comes up whether the author is a mathematician or a physicist. The topics have been chosen with a good eye to the physics, but the exposition is too spotless for a physicist. A good sign either way.

J. GUCKENHEIMER, J. MOSER, AND S. E. NEWHOUSE, *Dynamical Systems*, Birkhauser, 1980, 289 pp.

The movement towards concreteness in mathematics is most evident in the funneling of the abstract ergodic theory into what used to be called "phase plane analysis" and is now rebaptized by some as "propagation of chaos"—or worse. The remarriage between the old Julia-style functional iteration and the equally old dynamical theory in the plane is bearing an unexpected number of good-looking offspring, which is growing very fast, witness the admirably clear lectures here written up.

L. C. WASHINGTON, *Introduction to Cyclotomic Fields*, Springer, 1982, 387 pp.

In number theory, clearly written books are a rarity; the average book written on the subject assumes that the reader will have a modest background consisting of two years of algebraic geometry, two years of analytic number theory, and an elementary introduction to class-field theory. The author will also tacitly assume that the reader has p-adic analysis on his fingertips. How the mathematics publishing industry can survive while publishing such duds is a mystery which we shall mercifully refrain from investigating. In such an atmosphere, the appearance of a politely written, urbane book like this one is a breath of fresh air. There is no shouting at the reader, proofs can be followed, and even the reviewer could understand a couple of pages taken at random. Quite an achievement by the author.

GIAN-CARLO ROTA
EDITOR

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